PENGEMBANGAN MODEL PEDAGOGI DIGITAL DALAM PEMBELAJARAN MATEMATIKA TERINTEGRASI *COMPUTATIONAL THINKING* UNTUK MENINGKATKAN KEMAMPUAN *PROBLEM SOLVING* SISWA SEKOLAH MENENGAH PERTAMA

DISERTASI

Diajukan untuk memenuhi sebagian syarat untuk memperoleh
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Pengembangan Model Pedagogi Digital dalam Pembelajaran Matematika Terintegrasi *Computational Thinking* untuk Meningkatkan Kemampuan *Problem Solving* Siswa Sekolah Menegah Pertama

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ABSTRAK

Vita Nova Anwar (2024). Pengembangan Model Pedagogi Digital dalam Pembelajaran Matematika Terintegrasi *Computational Thinking* untuk Meningkatkan Kemampuan *Problem Solving* Siswa SMP

Penggunaan teknologi yang melibatkan keterampilan *computational thinking* merupakan kualifikasi yang diperlukan pada abad 21 ini. *Computational thinking* erat kaitannya dengan pembelajaran matematika. Dalam memecahkan masalah matematika yang kompleks penting untuk mengikuti langkah-langkah penyelesaian masalah sesuai tahapan *computational thinking*. Sehingga diperlukan model pembelajaran yang sesuai untuk mendukung hal tersebut. Penelitian ini bertujuan untuk mengembangkan model pedagogi digital dalam pembelajaran matematika terintegrasi *computational thinking* untuk meningkatkan kemampuan *problem solving* siswa SMP. Penelitian ini adalah penelitian pengembangan yang mengikuti model Plomp meliputi *preliminary research*, *prototyping phase*, dan *assesment phase* yang diuraikan secara deskriptif. Penelitian dilaksanakan pada dua sekolah SMP di kota Padang yang melibatkan 56 orang siswa kelas VIII. Aktivitas *computational thinking* yang dikembangkan dalam pembelajaran matematika terdiri dari aktivitas langsung dan aktivitas digital yang berbantukan teknologi. Instrumen penelitian adalah lembar validasi, lembar penilaian kepraktisan oleh guru, dan soal tes kemampuan *problem solving*. Hasil uji validitas menunjukkan bahwa dari segi konten, bahasa, penyajian dan kegrafikan sudah memenuhi kriteria valid dan sangat valid. Hasil uji praktikalitas memenuhi kriteria sangat praktis. Hasil uji efektivitas menunjukkan bahwa terdapat peningkatan kemampuan *problem solving* siswa.

Kata kunci: Pedagogi Digital, *Computational Thinking* dan *Problem Solving*

ABSTRACT

Vita Nova Anwar (2024). Development of a Digital Pedagogical Model on Integration of Computational Thinking in Mathematics Learning to Improve Students' Problem Solving Abilities

The use of technology involving computational thinking skills is a required qualification today. Computational thinking is closely related to mathematics learning. In solving complex mathematical problems, it is important to follow the problem solving steps according to the stages of computational thinking. So an appropriate learning model is needed to support this. This research aims to develop a digital pedagogy model in mathematics learning integrated with computational thinking to improve problem solving abilities of junior high school students. This research is development research that follows the Plomp model including preliminary research, prototyping phase, and assessment phase which are described descriptively. The research was carried out at two schools in Padang, involving 56 students in grade VIII. The research instruments were a validation sheet, a practicality assessment sheet by the teacher, and problem solving ability test questions. The results of the validity test show that in terms of content, language, presentation and graphics it meets the valid and very valid criteria. The results of the practicality test carried out are very practical criteria. The results of the effectiveness test show that there is an increase in students' problem solving abilities.

Keyword: Digital Pedagogy, Computational Thinking and Problem Solving

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